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MAURIZIO GARETTO, Med Vet, Torino
CONCENTRAZIONI PLASMATICHE DI PROGESTERONE ED ESTROGENI
IN RELAZIONE AL TRATTAMENTO CON PGF$_{2\alpha}$ 3 GIORNI
DOPO L’OVULAZIONE NELLA FATTRICE

PROGESTERONE AND ESTROGENS PLASMA CONCENTRATIONS AROUND PGF$_{2\alpha}$ TREATMENT 3 DAYS AFTER OVULATION IN THE MARE

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Introduction. Contrary to the long standing belief that CL in mares is not susceptible to the luteolytic effect of PGF$_{2\alpha}$ from Day 0 to Day 4 post-ovulation, recent studies reported that PGF$_{2\alpha}$ treatment during the early diestrus induced functional regressive changes in the CL (Bergfelt et al. 2006). The aim of this study was to examine the effect of a single dose PGF$_{2\alpha}$ administration given 3 days after ovulation upon progesterone (P4) and 17β-estradiol (E2) plasma concentrations for the 7 days after treatment. The interval from pre-treatment ovulation to post-treatment ovulation (interovulatory period) was evaluated.

Material and methods. 19 mares were enrolled. Three days after ovulation (evaluated by rectal ultrasonography), each mare was treated with 0.075 mg cloprostenol and then clinically and ultrasonographically monitored for ovulation detection. Beginning on the day of ovulation until 7 days after treatment, blood was collected every 24 hours from the jugular vein into heparanized tubes. After centrifugation, plasma was separated and stored frozen at -20°C until assayed. P4 and E2 analysis were then performed by RIA. Student’s t-test with Welch’s correction was used to compare P4 levels at treatment.

Results. On the day of treatment, the mean hormonal levels were 6.43±3.89 ng/mL for P4 and 3±1.85 pg/mL for E2. According to the P4 concentrations after treatment, mares can be classified in two groups: Group A, 10 mares (52.6%) with a prompt decrease, followed by no resurgence (no P4 > 1ng/ml) (Figure 1); Group B, 9 mares (47.4%) in which a slight decrease 2-3 days after treatment, followed by a resurgence of P4 concentrations was detected (Figure 2). The P4 levels at treatment showed a significant difference (p<0.05) between the two groups. The days before treatment, E2 levels were similar in the 2 groups, followed by a more evident increase in the Group A.

The interovulatory period was 12.3±2.5 in Group A and 12.4±3.5 in Group B.

Discussion. Mares with a sharp and constant decrease of P4 levels the day after administration showed high P4 concentrations on the day of PGF$_{2\alpha}$ treatment. Ovulation was hastened in all, ex-

Figure 1. P4 and E2 profile in Group A

Figure 2. P4 and E2 profile in Group B
cept one, treated animals, so that the interovulatory period resulted of approximately 13 days. This is shorter compared to the 21 days interval reported for spontaneous estrus cycles by Ginther (1992). The estrogenic profile does not provide additional information.

**Conclusions.** P4 decrease after PGF2α treatment at 3 days after ovulation occurred in 53% of mares. Ovulation could be hastened and interovulatory period shortened despite post-treatment P4 resurgences.

**References**

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